

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
TEXARKANA DIVISION**

**CATHX RESEARCH LTD.,**

Plaintiff,

v.

**2G ROBOTICS INC.**

Defendant.

Civil Action No: \_\_\_\_\_

**JURY TRIAL DEMANDED**

**COMPLAINT**

Plaintiff Cathx Research Ltd. for its Complaint against 2G Robotics Inc., alleges as follows:

**THE PARTIES**

1. Plaintiff Cathx Research Ltd. (“Cathx”) is a limited company organized under the laws of the Republic of Ireland with its principal place of business located at D3, M7 Business Park, Newhall, Naas, Co. Kildare, Ireland.

2. Defendant 2G Robotics Inc. (“2G Robotics”) is a corporation organized under the laws of Canada with its principal place of business at 120 Randall Dr Unit 1E & 1F, Waterloo, Ontario, Canada N2V 1C6.

**JURISDICTION AND VENUE**

3. This action is for patent infringement against 2G Robotics under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*, including 35 U.S.C. § 271. Cathx brings this action to seek damages and injunctive relief arising out of 2G Robotics’ infringement of U.S. Patent No. 10,116,842 (“the ‘842 Patent”) attached hereto as Exhibit A.

4. This action arises under the patent laws of the United States. Accordingly, this Court has subject matter jurisdiction over Cathx's patent claims pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. Personal jurisdiction is proper in this Court pursuant to Fed. R. Civ. P. 4(k)(2) because Cathx's claims arise under federal law, 2G Robotics is not subject to jurisdiction in any state's courts of general jurisdiction, and the exercise of jurisdiction of 2G Robotics comports with due process based on its contacts with the United States. 2G Robotics, at least through its active efforts to sell its infringing product(s) in the United States, has established minimum contacts with the United States such that maintenance of this suit does not offend traditional notions of fair play and substantial justice.

6. Specifically, 2G Robotics has purposefully directed its infringing activities at residents of the United States by bidding on requests for proposal issued by entities and organizations within the United States, including at least the University of Southern Mississippi ("USM") and, on information and belief, the United States Department of Defense. The claim for patent infringement asserted in this suit arises out of 2G Robotics' activities within the United States, *i.e.* its bids on the aforementioned requests issued by United States entities and organizations. Finally, the United States' assertion of personal jurisdiction over 2G Robotics is reasonable and fair because any burden on 2G Robotics is sufficiently outweighed by the United States' substantial interest in enforcing its federal patent laws and Cathx's interest in obtaining effective and convenient relief. No competing United States forum exists (because the forum is the entire United States) for the consideration of competing substantive social policies or efficiency of resolution, and the United States' foreign relations policies with Canada will not be hindered by the exercise of personal jurisdiction here. Accordingly, personal jurisdiction over

2G Robotics is properly exercised by this Court.

7. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391(c)(3) because 2G Robotics does not reside in the United States and therefore may be sued in any judicial district herein.

### **BACKGROUND FACTUAL ALLEGATIONS**

8. Cathx is a leading innovator in subsea imaging and measurement. Its systems integrate with autonomous underwater vehicles (“AUVs”) and remotely operated underwater vehicles (“ROVs”) to collect and process subsea data across many applications and industries, including the energy, defense, oceanographic and fishery sectors. Its range of imaging and inspection systems include the Hunter, an AUV imaging and laser system; the Scout, an observation class ROV imaging and laser profiling system; the Pathfinder, a work class and high speed ROV advanced imaging and laser profiling system; and Prowler I, a dual-mode imaging and laser measurement system. Its customers include a range of private, academic, and governmental entities throughout the world.

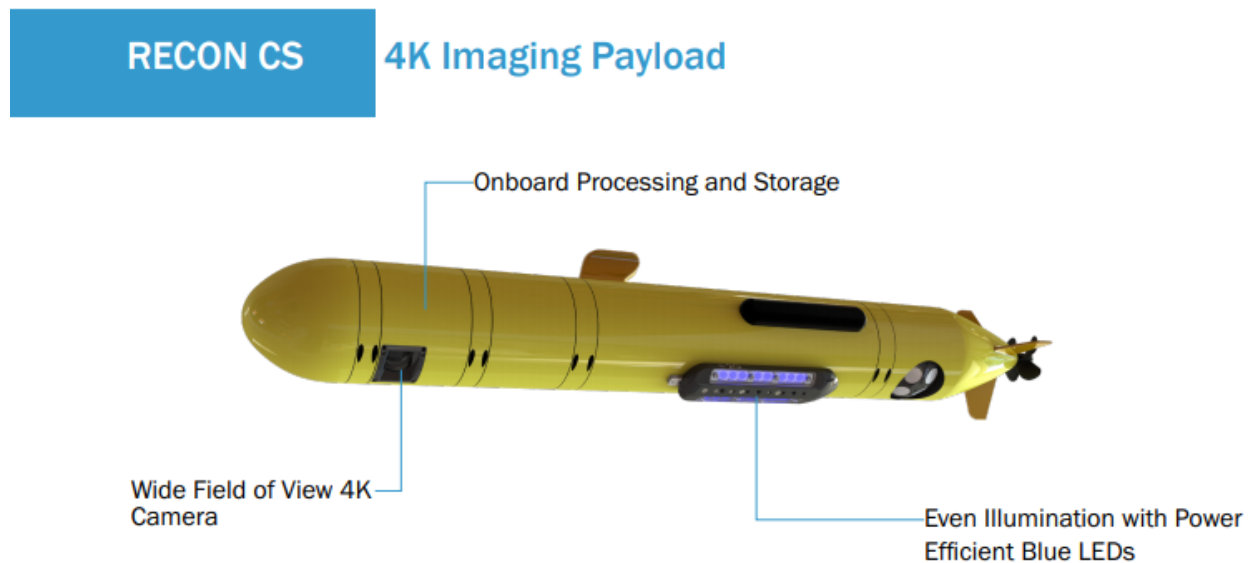
9. To protect its investment in its innovations, Cathx has applied for and received patents in multiple international jurisdictions. Notably, in the United States, it is the owner of all right, title, and interest to the ‘842 Patent, U.S. Patent Nos. 10,116,841 (“Relation to Underwater Imaging for Underwater Surveys”), 10,158,793 (“Processing Survey Data of an Underwater Scene”), and 10,163,213 (“3D Point Clouds”), and a pending U.S. Application published as Publication No. US20190019266 (“Method and System for Processing Image Data”).

10. 2G Robotics owns and operates a website at <https://www.2grobotics.com/>, where it describes its recently released line of AUV payloads: RECON. *See* <https://www.2grobotics.com/products/recon-auv-payloads/> (last accessed May 20, 2021).

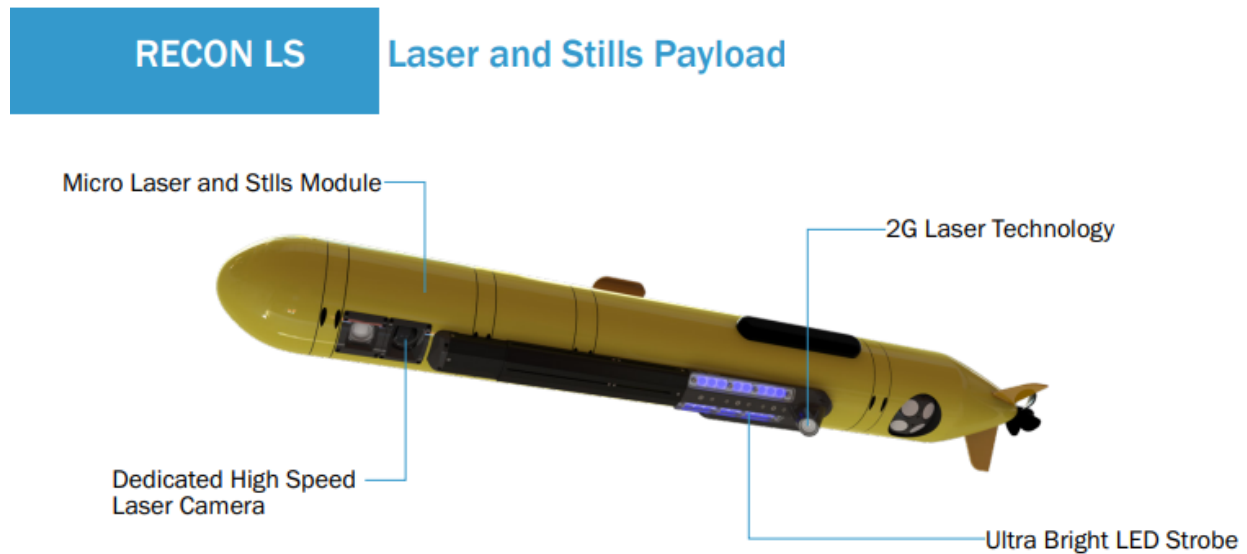
Attached hereto as Exhibit B is the Datasheet for the RECON payload line, available online at [https://cdn2.hubspot.net/hubfs/4456320/Datasheet%20Downloads/RECON%20Datasheet%20\(LS-CS\).pdf](https://cdn2.hubspot.net/hubfs/4456320/Datasheet%20Downloads/RECON%20Datasheet%20(LS-CS).pdf).

11. The RECON line consists of RECON CS, which employs a “[w]ide field of view Micro OBSERVER 4K stills camera” and “NOVA LED Lightbar with power efficient blue LEDs,” and the RECON LS, which additionally employs a “[h]igh resolution ULS-500 Micro laser scanner.” *See* Exhibit B at 2.

12. A copy of a diagram of the RECON CS taken from the 2G Robotics Datasheet attached as Exhibit B is reproduced below:



13. A copy of a diagram of the RECON LS taken from the 2G Robotics Datasheet attached as Exhibit B is reproduced below:



14. On information and belief, the RECON line was announced on 2G Robotics' website on May 6, 2020. *See* Exhibit C, "2G Robotics Launches RECON Payloads for Modular AUVs," 5/6/2020, available at <https://www.2grobotics.com/2g-robotics-launches-recon-payloads-for-modular-auvs/> (last accessed May 20, 2021).

15. As of May 6, 2020, 2G Robotics had already delivered its RECON CS system to an "undisclosed customer in the United States" and, as of May 6, 2020, it was available for purchase. *See* Exhibit C.

### **THE '842 PATENT**

16. Cathx is and has at all relevant times been the owner of all right, title, and interest to the '842 Patent and possesses all rights to recovery under the '842 Patent.

17. The '842 Patent issued on October 30, 2018. Exhibit A.

18. The '842 Patent was and is valid and enforceable at all times relevant to this action and is entitled to a presumption of validity under 35 U.S.C. § 282.

19. Claim 1 of the '842 Patent reads:

An underwater survey system for gathering range and 3D dimensional information of subsea objects, the system comprising

a camera configured to capture images of a subsea scene; and

one or more reference projection light sources configured to project one or more structured light beams

the camera configured to capture a sequence of images of each of a plurality of fields of view within the scene, where each of the plurality of fields of view of the scene is illuminated by one or more of the light sources, and wherein the camera and light sources are synchronized so that each time an image is acquired, a specific configuration of light source parameters and camera parameters is used;

the one or more reference projection light sources having a fixed distance from the camera and a fixed orientation in relation to the camera.

20. Claims 2-12 of the '842 Patent are dependent claims stemming from Claim 1. *See* Exhibit A.

21. Claim 13 of the '842 Patent reads:

A method for gathering range and 3D dimensional information of subsea objects in a system comprising a camera and one or more reference projection light sources, the method comprising the steps of:

the one or more reference projection light sources projecting one or more structured light beams onto an object; and

the camera capturing a sequence of images of each of a plurality of fields of view of the object having the one or more structured light beams projected thereon, where the object is illuminated by one or more of the light sources, wherein the camera and light sources are synchronized so that each time an image is acquired, a specific configuration of light source parameters and camera parameters is used.

22. Claims 14-17 of the '842 Patent are dependent claims stemming from Claim 13.

*See Exhibit A.*

## **2G ROBOTICS' INFRINGEMENT**

23. On November 12, 2020, the University of Southern Mississippi ("USM") announced a request for proposal ("RFP") for Bid 21-32 Imaging and Bathymetry System, RFx 3160003984, and accepted submissions until December 3, 2020. Cathx submitted a proposal in response to the RFP.

24. Unfortunately, Cathx did not win the bid. When it inquired, Cathx was informed that 2G Robotics had successfully won the contract.

25. On information and belief, 2G Robotics won the contract by offering its RECON LS system and has sold or agreed to sell the RECON LS system to USM.

26. On information and belief, 2G Robotics has responded to additional bids in the United States offering its RECON LS system. On information and belief, 2G Robotics has offered its RECON LS system to the United States Department of Defense.

27. Accordingly, 2G Robotics has made, used, imported, sold, and/or offered to sell the RECON CS and RECON LS systems in the United States.

28. As readily ascertained from the diagrams reproduced in Paragraphs 12 and 13, *supra*, the RECON CS and RECON LS systems comprise each and every claim element of

Claims 1-12 of the '842 Patent.

29. When operated, the RECON CS and RECON LS systems perform each and every step of Claims 13-17 of the '842 Patent.

30. For example, Chris Gilson, General Manager of 2G Robotics, appeared in Episode 33 of The Underwater Technology Podcast. The episode was titled "Chris Gilson, 2G robotics on subsea dynamic laser scanning." Audio of the podcast can be accessed at any of the following links:

- a. [https://open.spotify.com/episode/7wPD9aaeopH7gYx1azjBJs?si=TIR2NQkLT\\_-J\\_Ro1lR8xRg&nd=1](https://open.spotify.com/episode/7wPD9aaeopH7gYx1azjBJs?si=TIR2NQkLT_-J_Ro1lR8xRg&nd=1) (last accessed 05/21/2021)
- b. <https://podcasts.apple.com/us/podcast/pod33-chris-gilson-2g-robotics-on-subsea-dynamic-laser/id1509323385?i=1000496554679> (last accessed 05/21/2021)
- c. <https://www.sut.org/publications/the-underwater-technology-podcast/> (last accessed 05/21/2021)

31. In the interview, at approximately the 19:57 timestamp, Mr. Gilson describes the features of the RECON systems:

Interviewer: Ok, and, looking at your website, I see there's a spectacular image there saying that '2G Robotics launches RECON payloads for modular AUVs,' so can you tell me a bit more about that?

Gilson: Yeah, definitely. So, as I said, we kind of started as an underwater laser scanning company, that was our main focus. Even from the start it was very clear that when you're using laser scanning systems on say an AUV, an ROV, you're often using imaging markers, stills imaging-based systems at the same time. Though the laser model gives you that 3D understanding that, very quantitative, can actually take those direct measurements, it's also very beneficial to have stills images to either overlay or look at in tandem to the laser data to give you that more qualitative understanding of that target.

So the other aspect is when you have two optical systems operating at the same



time, both laser and stills imaging, they need to be synchronized very well, so when we're strobing a lighting system to take pictures, that will actually wash out the laser line and therefore you won't get any laser data while you're strobing. So even at the very start with, on the HUGINS, we identified that when we were taking pictures there was gaps in our laser data, which is not ideal from a data perspective. So that's really what brought us into starting to make stills imaging camera systems as well.

So because we have that very tight integration between the two, we can actually strobe a light to illuminate the seabed in between the laser profile. So if we're operating at about 80 hertz capture speed with our laser in between, say, every 30 or 40 laser strobes we're able to strobe our light and actually get no gaps in the laser data. So that was a huge push for us. We then were contracted by Kongsberg to actually develop a long-range imaging system for their AUVs for a specific customer.<sup>1</sup> So before that there was really no camera on the market that could do much more than 5 meters range for stills imaging from these vehicles.

But for a lot of these new survey applications, the AUVs want to run at a higher altitude, so they want to run at closer to 10 meters so you can get that side scanner, the SAS, sonar data at a wide coverage rate on both sides of the vehicle. So we then took our laser scanning technology, so again a focus on those very sensitive cameras, and we applied it to try to develop our own long-range imaging system. Specifically for high-speed vehicles like AUVs.

So, I mean, we identified there was two problems, one is having a very sensitive camera if you want to operate at those ranges, and the two is outputting a ton of light power. So that led us to release our Observer cameras, so they're high-sensitivity stills cameras, and then also our Nova LED panel. So I still believe it's the highest-output LED panel on the market. It outputs about half a million lumens, and can do so by strobing all that power in about 1-2 milliseconds from the vehicle. So with that delivery, it really allowed us to enter that imaging market and sell a package of both our laser scanning with our stills camera as well.

We've also put a ton of effort into real-time enhancement of that data. So, in real time, we not only capture images or stills images but we're also enhancing them in real time on onboard the vehicle. So taking high-dynamic range images from our cameras and actually leveling light across the image, pulling out those faint signals, and then also enhancing contrast and really improving that image. So with that delivery on the HUGIN, where we achieved that 10 meter range on the imaging system, that really allowed us to move into a new area of the market and that kind of led us to the RECON payload. So we were on the HUGIN vehicles, there's a huge market and very growing for these small AUV's, whether that be from Hydroid, or L3Harris OceanServer, so we've now taken our smaller laser

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<sup>1</sup> Cathx reserves the right to identify this Kongsberg system as an accused product should discovery reveal that any infringing activities took place in the United States.

scanning platform, the ULS-500 Micro, added a camera and lighting system to that, and released RECON.

So RECON is basically our prepackaged modular AUV payload, so they can come in whatever vehicle diameter you're operating on, whether that be a 9 inch, or 6-9 inch for the smallest AUVs, or 12 inch for the medium class, but it's a pre-integrated module tube that has all your imaging, so either laser and camera, or just cameras, onboard processing to do the real time processing, and then about 2 terabytes of storage so we can store it all onboard there. And then we have an external module that's either the lighting system, or the lighting and the laser system, to emit that onto the seabed.

So really the goal there is to make it as simple as possible for these small vehicles to adopt, you know, this cutting-edge optical technology. Both long-range imaging and high-speed laser collection as well. So we've actually delivered that onto a few small AUVs already, and continued to expand that line [unintelligible] some pre-integrated modules for various AUVs.

32. Mr. Gilson additionally describes the RECON system in some detail in the December 2020 issue of Ocean News & Technology (ON&T), in an article titled "The Future of Subsea Sensors Will Enable Autonomy." A copy of the ON&T issue is attached hereto as Exhibit D. Mr. Gilson's article appears on pages 16-17.

33. On March 4, 2021, through its counsel, Cathx sent 2G Robotics a letter via electronic mail that provided actual notice of its patent portfolio (including the '842 Patent) and demanded that 2G Robotics cease its infringing activities.

34. Accordingly, 2G Robotics had actual notice of the '842 Patent at least as early as March 4, 2021.

35. After several follow up correspondences, 2G Robotics responded through counsel on May 10, 2021 by categorically denying infringement and asserting invalidity of the '842 Patent. 2G Robotics did not provide any analysis or details as to why the RECON LS system does not infringe the '842 Patent and declined further discussion. Accordingly, Cathx had no choice but to bring the present suit to enforce its patent rights.

**COUNT I: DIRECT PATENT INFRINGEMENT**  
**(35 U.S.C. § 271(a))**

36. Cathx realleges and incorporates each of the allegations set forth in Paragraphs 1-35 as if restated herein in their entirety.

37. 2G Robotics has infringed and continues to infringe each and every claim of the ‘842 Patent by making, using, importing, selling, and/or offering to sell the RECON LS and RECON CS products in the United States without authorization or license from Cathx.

38. 2G Robotics has had actual knowledge of the ‘842 Patent since at least March 4, 2021 by virtue of the cease-and-desist letter sent by Cathx.

39. 2G Robotics had actual knowledge of the ‘842 Patent prior to commencing its infringement.

40. 2G Robotics has profited by its infringement of the ‘842 Patent, and Cathx has suffered actual harm as a result of 2G Robotics’ infringement.

41. As a direct and proximate result of 2G Robotics’ infringement, Cathx has suffered irreparable harm and monetary and other damages in an amount to be determined.

42. 2G Robotics’ infringement has been and continues to be willful. Accordingly, Cathx is entitled to treble damages under 35 U.S.C. § 284 and this is an exceptional case under 35 U.S.C. § 285.

43. Unless 2G Robotics is preliminarily and permanently enjoined by this Court from continuing its infringement of the ‘842 Patent, Cathx will continue to suffer additional irreparable harm, including loss of market share and erosion of its patent rights.

**COUNT II: INDUCED PATENT INFRINGEMENT**

44. Cathx realleges and incorporates each of the allegations set forth in Paragraphs

1-43 as if restated herein in their entirety.

45. The Patent Laws of the United States provide that “[w]hoever actively induces infringement of a patent shall be liable as an infringer.” 35 U.S.C. § 271(b).

46. When 2G Robotics’ customers, including USM, operate the RECON LS or RECON CS system, they directly infringe each and every claim of the ‘842 Patent.

47. When 2G Robotics provides its customers with operating instructions for the RECON LS or RECON CS system, it instructs its customers to commit direct infringement of the ‘842 Patent.

48. 2G Robotics has at all relevant times known that customers commit direct infringement of the ‘842 Patent when using its RECON LS or RECON CS system.

49. 2G Robotics at all relevant times intended that customers commit direct infringement of the ‘842 Patent when using its RECON LS or RECON CS system.

50. 2G Robotics has had actual knowledge of the ‘842 Patent since at least March 4, 2021 by virtue of the cease-and-desist letter sent by Cathx.

51. 2G Robotics had actual knowledge of the ‘842 Patent prior to commencing its induced infringement.

52. 2G Robotics has profited by its contributory infringement of the ‘842 Patent, and Cathx has suffered actual harm as a result of 2G Robotics’ induced infringement.

53. As a direct and proximate result of 2G Robotics’ induced infringement, Cathx has suffered irreparable harm and monetary and other damages in an amount to be determined.

54. 2G Robotics’ induced infringement has been and continues to be willful. Accordingly, Cathx is entitled to treble damages under 35 U.S.C. § 284 and this is an exceptional case under 35 U.S.C. § 285.

55. Unless 2G Robotics is preliminarily and permanently enjoined by this Court from continuing its induced infringement of the ‘842 Patent, Cathx will continue to suffer additional irreparable harm, including loss of market share and erosion of its patent rights.

### **COUNT III: CONTRIBUTORY PATENT INFRINGEMENT**

56. Cathx realleges and incorporates each of the allegations set forth in Paragraphs 1-55 as if restated herein in their entirety.

57. The Patent Laws of the United States provide that “[w]hoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.” 35 U.S.C. § 271(c).

58. At all relevant times, 2G Robotics has known and intended that its RECON LS and/or RECON CS systems infringe the ‘842 Patent.

59. When 2G Robotics’ customers operate the RECON LS or RECON CS system, they directly infringe each and every claim of the ‘842 Patent. This is a direct result of 2G Robotics’ contributory infringement by the sale and importation of the RECON LS and RECON CS systems in the United States.

60. The RECON LS and RECON CS systems are made and especially adapted for use in infringement of the ‘842 Patent.

61. The RECON LS and RECON CS systems are not staple articles or commodities of commerce suitable for substantial noninfringing use.

62. 2G Robotics has at all relevant times known that customers commit direct infringement of the '842 Patent when using its RECON LS or RECON CS system.

63. 2G Robotics at all relevant times intended that customers commit direct infringement of the '842 Patent when using its RECON LS or RECON CS system.

64. 2G Robotics has had actual knowledge of the '842 Patent since at least March 4, 2021 by virtue of the cease-and-desist letter sent by Cathx.

65. 2G Robotics had actual knowledge of the '842 Patent prior to commencing its contributory infringement.

66. 2G Robotics has profited by its contributory infringement of the '842 Patent, and Cathx has suffered actual harm as a result of 2G Robotics' contributory infringement.

67. As a direct and proximate result of 2G Robotics' contributory infringement, Cathx has suffered irreparable harm and monetary and other damages in an amount to be determined.

68. 2G Robotics' contributory infringement has been and continues to be willful. Accordingly, Cathx is entitled to treble damages under 35 U.S.C. § 284 and this is an exceptional case under 35 U.S.C. § 285.

69. Unless 2G Robotics is preliminarily and permanently enjoined by this Court from continuing its contributory infringement of the '842 Patent, Cathx will continue to suffer additional irreparable harm, including loss of market share and erosion of its patent rights.

#### **PRAYER FOR RELIEF**

Wherefore, Plaintiff Cathx Research Ltd. requests that this Court find in its favor and against Defendant 2G Robotics Inc. and grant Plaintiff the following relief:

- A. That Judgment be entered that 2G Robotics Inc. has committed direct infringement of U.S. Patent No. 10,116,842 under 35 U.S.C. § 271(a).

- B. That Judgment be entered that 2G Robotics Inc. has committed induced infringement of U.S. Patent No. 10,116,842 under 35 U.S.C. § 271(b).
- C. That Judgement be entered that 2G Robotics Inc. has committed contributory patent infringement of U.S. Patent No. 10,116,842 under 35 U.S.C. § 271(c).
- D. That, in accordance with 35 U.S.C. § 283, 2G Robotics, Inc., and all affiliates, employees, agents, officers, directors, attorneys, successors, and assigns and all those acting on behalf of or in active concert or participation with any of them, be preliminarily and permanently enjoined from:
  - (1) directly or indirectly infringing U.S. Patent No. 10,116,842 and
  - (2) making, using, selling, and offering for sale the accused RECON CS and RECON LS systems;
- E. A finding that 2G Robotics' infringement has been willful;
- F. An award of damages sufficient to compensate Plaintiff for 2G Robotics Inc.'s infringement under 35 U.S.C. § 284, in no event an amount less than a reasonable warranty, including an award of enhanced damages up to three times the amount found or assessed;
- G. That the case be found exceptional under 35 U.S.C. § 285 and that Plaintiff be awarded its attorneys' fees;
- H. Costs and expenses incurred in this action;
- I. An award of prejudgment and post-judgment interest; and
- J. Such other and further relief as the Court may deem just and proper.

#### **JURY DEMAND**

Plaintiff demands a trial by jury on all issues so triable.

Dated: June 1, 2021

Respectfully submitted,

/s/ Lance Lee

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